



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,341	07/24/2003	Mahfuza B. Ali	57169US003	9160

32692 7590 05/05/2005

3M INNOVATIVE PROPERTIES COMPANY  
PO BOX 33427  
ST. PAUL, MN 55133-3427

EXAMINER
----------

PEZZUTO, HELEN LEE

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/626,341

Applicant(s)

ALI ET AL.

Examiner

Helen L. Pezzuto

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 8-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-58 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/28, 8/19, 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1713

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-7 in the reply filed on 4/14/05 is acknowledged. The traversal is on the ground(s) that Groups II-VII are interrelated that a search of one group of claims will reveal art to the other. This is not found persuasive because as set forth in the previous restriction requirement, the groups of inventions are so diverse, such that the search of all groups would impose an undue burden of the office. As set forth in the restriction requirement, applicant recites two methods in making the polymer, and final product such as dental composition, as well as method of treating an oral surface, etc. would require tremendous amount of search in different area of technologies. Accordingly, the examiner's position is maintained.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 8-58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/14/05.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Samra et al. (US-089).

US 6,538,089 B1 discloses a physically crosslinked copolymer comprising hydrophobic, hydrogen bonding and thermosensitive monomers. In one of patentees' embodiment, a physically crosslinked copolymer of HEMA/styrene/NIPAAm was exemplified and claimed (col. 2, lines 3-5; col. 5, lines 41-56; col. 6, claim 9). The relative molar ratio of prior art copolymer encompasses those expressed in the present claims. Thus, anticipating the instant invention.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1713

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bae et al. (US-055) or Meier et al. (US-946).

US 5,262,055 to Bae et al. discloses an artificial pancreas system comprising a rechargeable islet/polymer matrix system, containing a thermosensitive polymer. Prior art thermosensitive polymer include N-isopropylacrylamide monomeric units and may be further modified by inclusion of hydrophilic or hydrophobic comonomers. Suitable hydrophilic comonomers include 2-hydroxyethyl methacrylate and hydroxypropyl methacrylate which fall within the scope of the instant non-terminal monomeric units containing a pendant (meth)acrylate group (col. 7, line 41 to col. 9, line 42).

US 6,616,946 B1 to Meier et al. discloses stimulus responsive block copolymer hollow particle delivery system, comprising amphiphilic triblock ABA or BAB copolymer (abstract). Dual or multi stimuli responsive polymers are taught to be within the scope of prior art delivery system, inclusive of N-isopropyl acrylamide copolymers (col. 5,

Art Unit: 1713

lines 19-28; col. 7, lines 46-61). Suitable hydrophilic monomers in the amphiphilic copolymer include hydroxyl alkyl (meth)acrylate having segment molecular weight of 500-50,000, which corresponds to the weight% expressed in the present claims (col. 10, lines 6-58).

Both US-055 and US-946 discussed above teach the production of environment responsive copolymer systems, comprising thermosensitive NIPAAm as well as hydrophilic hydroxyalkyl (meth)acrylate as suitable recurring units. This makes the selection of these monomeric units readily envisaged by one having ordinary skill in the art, motivated by the reasonable expectation of success. Once the selection of the recurring units are suggested, it would have been obvious to one skilled in the art to determine the optimum or workable ranges of the recurring units which are suitable to the envisaged applications. Such undertaking would only involve routine skill in the art. Thus, rendering obvious the present claims.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

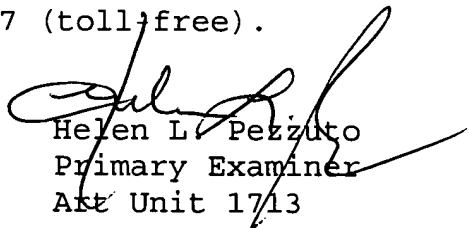
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L.

Art Unit: 1713

Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



Helen L. Pezzuto  
Primary Examiner  
Art Unit 1713

hlp